

WHAT IS CLAIMED IS:

1. ~~A pre-assembled apparatus for reducing the tendency~~
of upper portions of walls to move with respect to the
foundation as a result of lateral forces applied in a
direction parallel to the wall, said apparatus comprising:
two vertically extending posts having both an upper
and a lower end and defining a front and a back side,
wherein said two vertically extending posts are
positioned in a pre-selected spaced relationship;
a horizontally extending upper member which is
connected to said upper ends of said two vertically
extending posts and is configured to be connected to an
upper portion of said wall;
one or more brace members that interconnect said
two vertically extending posts so as to maintain said
vertically extending posts in said pre-selected spaced
relationship when said apparatus is installed in a wall
that is under shear stress from said lateral forces;
and
two attachment points which are respectively
connected to said lower ends of said two vertically
extending posts wherein said both of said two attachment
points are configured to be attached to an anchor point
that is anchored in said foundation of said building to
thereby anchor said vertically extending posts to said
anchor points, and wherein said apparatus is pre-
assembled to allow for installation in said wall by
attaching said two attachment points to said anchor
points and connecting said upper member to said upper
portion of said wall so that said apparatus thereby
reduces the tendency of said upper portion to move
relative said foundation.
2. The apparatus of Claim 1, wherein said one or more
brace members is comprised of two planar members attached to
said front and said back side of said two vertical posts and
to said upper horizontal member.

3. The apparatus of Claim 2, further comprising a lower horizontal member that is attached to said lower ends of said two vertical posts and wherein said two planar members are attached to said lower horizontal member.

5 ~~4. The apparatus of Claim 3, wherein said apparatus reduces the tendency of an upper portion of said wall to move relative said foundation resisting the uplift force of said wall occurring as a result of said overturn movement caused by said wall being exposed to said lateral forces.~~

10 5. The apparatus of Claim 4, wherein said two vertical posts and said planar members are formed out of metal.

15 ~~6. The apparatus of Claim 5, wherein said two vertical posts are approximately 7'-8" in height and said apparatus is less than 3 feet in width and is reducing the motion of an upper plate of said wall that is connected to said upper horizontal member to approximately 0.5" of deflection or less from a rest position when subjected to 3,500 lbs of lateral force applied on said upper plate in a direction parallel to said horizontal upper member in pseudo-cyclic shear testing.~~

20 7. The apparatus of Claim 1, wherein said two vertical posts are comprised of:

25 an inner retaining member having a U-shaped cross-section and having an opening and defining internal space inside of said inner retaining member extending substantially the full length of said inner retaining member;

30 one or more reinforcing members positioned within said internal space of said inner retaining member to provide reinforcement of said inner retaining member along said length of said member; and

35 an outer retaining member positioned so as to cover the opening defined by said U-shaped inner retaining member and to thereby retain said one or more reinforcing members within said internal space of said inner retaining member.

8. The apparatus of Claim 7, wherein said brace members are comprised of one or more planar members wherein said one or more planar members have a lip formed along one edge and wherein said lip of at least one of said one or more planar members is positioned between said inner retaining member and said outer retaining member adjacent said opening in said inner retaining member.

9. The apparatus of Claim 8, wherein a plurality of screws are inserted through said outer retaining member, said one or more planar members, said inner retaining member and said reinforcing members to securely fasten said planar members to said vertical post substantially along the entire length of said vertical post.

~~10. An apparatus for reducing the tendency of upper portions of walls to move with respect to the foundation as a result of lateral forces applied in a direction parallel to the wall, said apparatus comprising:~~

~~two vertically extending posts having both an upper end and a lower end and defining a front and back side, wherein said two vertically extending posts are positioned in a preselected spaced relationship;~~

~~at least one panel member interconnecting said two vertically extending posts substantially along the entire length of said posts; and~~

~~two attachment points which are respectively connected to said lower ends of said two vertically extending posts wherein said both of said two attachment points are configured to be attached to a holdown bolt that is anchored in said foundation of said building to thereby anchor said vertically extending posts to said foundation, and wherein said apparatus is configured to allow for installation in said wall by attaching said two attachment points to said holdown bolts and connecting said upper portion of said vertical posts to said upper plate so that said apparatus thereby reduces~~

9/8/01

the tendency of said upper plate of said wall to move relative said foundation.

11. ~~The apparatus of Claim 10, further comprising:~~

an upper horizontal member that interconnects said upper portions of said two vertical posts, wherein connection between said upper portions of said vertical posts is achieved by connecting said upper horizontal member to said upper plate; and

a lower horizontal member that interconnects said lower portions of said two vertical posts.

12. The apparatus of Claim 11, wherein said one or more planar members is comprised of two planar members attached to said front and said back side of said two vertical posts and ~~to said upper and lower horizontal members.~~

13. The apparatus of Claim 12, wherein said two attachment points are comprised of two brackets that are configured to be connected to said holdown bolts in said foundation, wherein said two brackets are configured to receive said lower horizontal member and said two vertical posts so that said lower horizontal member and said two vertical posts can be fixedly attached to said brackets.

14. ~~The apparatus of Claim 13, wherein said lower horizontal member is configured to be attached to shear bolts mounted in said foundation to thereby reduce the likelihood of a lower portion of said shear panel becoming dislodged from said foundation in response to lateral forces applied to said wall.~~

15. A method of building a wall so that the tendency of an upper portion of a wall having an upper plate to move relative a lower portion of said wall is reduced, said method comprising the steps of:

providing a foundation for said wall, wherein one or more holdown bolts are installed in said foundation at a pre-selected locations in said foundation;

mounting two or more studs so as to extend substantially vertically upward from said foundation;

positioning an upper plate on a top surface of said two or more studs;

5 attaching a lower portion of a shear panel, that is pre-assembled to have two vertical posts and at least one panel interconnecting said two vertical posts substantially along the vertical lengths of said posts, to said holdown bolts so that said panel is positioned between said two studs; and

10 attaching an upper portion of said shear reduction panel to said upper plate of said wall so that movement of said upper plate of said wall in response to lateral forces applied to said wall is reduced.

15 16. The method of Claim 1, wherein the step of attaching a lower portion of a shear panel to said holdown bolt comprises:

mounting a bracket on each of said holdown bolts and securing said bracket to said holdown bolt through use of a nut; and

20 positioning a lower horizontal member in said brackets, wherein said lower horizontal member has a U-shaped cross-section and wherein said vertically extending members are positioned within an opening in said lower horizontal members and wherein positioning said lower horizontal member in said brackets results in a lower portion of said two vertically extending members being positioned adjacent said brackets; and

25 securing said brackets to said lower horizontal member and said vertically extending members by positioning at least one bolt through each of said brackets, said lower horizontal member and said vertical member and then tightening a nut to said at least one bolt.

30 17. The method of Claim 15, wherein the step of attaching said upper portion of said bracket to said upper portion of said wall comprises attaching a gusset plate to said upper plate and attaching said gusset plate to an upper

member of said shear panel that extends between said two vertically extending posts.

18. A method of reducing the tendency of a second story of a wall to move relative a foundation of said wall as a result of forces being applied to said wall, said method comprising the steps of:

attaching a first pre-assembled shear panel to a foundation of said wall wherein said first pre-assembled shear panel includes two vertically extending posts and at least one panel extending therebetween;

attaching an upper portion of said first pre-assembled shear panel to an upper plate of a first story of said wall so as to reduce the tendency of an upper portion of said first story of said wall to move relative said foundation in response to shear forces applied to said wall;

attaching a second pre-assembled shear panel, wherein said second pre-assembled shear panel includes two vertically extending posts and at least one panel extending therebetween, to a lower plate on said second story of said wall;

attaching an upper portion of said second pre-assembled shear panel to an upper plate on said second story of said wall; and

interconnecting said lower portion of said second pre-assembled shear panel to said upper portion of said first pre-assembled shear panel.

19. The method of Claim 18, wherein said step of attaching said lower portion of said first pre-assembled shear panel to said foundation comprises connecting said vertically extending members to said holdown bolts to thereby anchor said vertically extending members.

20. The method of Claim 19, wherein said step of attaching said upper portion of said first pre-assembled shear panel to said upper plate of said first story comprises attaching a gusset plate between said upper portion of said

first pre-assembled shear panel and said upper plate of said first story.

21. The method of Claim 20, wherein said step of attaching said upper portion of said second pre-assembled shear panel to said upper plate of said second story comprises attaching a gusset plate between said upper portion of said second pre-assembled shear panel and said upper plate of said second story.

10

Ad 56